

SHORT COMMUNICATION

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PEROMYSCUS CARCASS IN THE NEST OF A FLAMMULATED OWL

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The flammulated owl (*Otus flammeolus*) is an insectivorous species (Marshall 1957, Ross 1969) that breeds in dry, montane conifer forests of western North America. In Colorado, this owl fed primarily on small lepidopterans, although its diet included a variety of arthropods (e.g., Orthoptera, Diptera, and Arachnida) as summer progressed (Reynolds and Linkhart 1987). Some authors (Bent 1938, Bailey and Niedrach 1965) have reported that flammulated owls occasionally prey on small mammals and birds. However, none of these authors provided direct evidence of flammulated owls feeding on vertebrates. Furthermore, captive flammulated owls that were offered live deer mice (*Peromyscus* spp.) never killed the *Peromyscus*, although they readily carried and ate *Peromyscus* body segments (mass < 14 g; K. McKeever pers. comm.).

Recently, Holt et al. (1987) reported two secondhand observations of flammulated owls in late fall in Montana. One was of an owl with a vole in its talons, and another of an owl chasing passerines at a bird feeder. If credible, the first of these constitutes the first evidence of a flammulated owl possibly capturing a vertebrate. Here we report the occurrence of a *Peromyscus* spp. carcass in the nest of a flammulated owl.

On 29 July 1988, a whole carcass of a *Peromyscus* spp. (mass 15–20 g, age undetermined) was found in the nest cavity of a flammulated owl. The nest, 5.6 m high in a limber pine (*Pinus flexilis*), was in a natural cavity created by rot at a site where a large, nearly vertical limb had broken from the trunk. The carcass was in the bottom of the cavity (depth = 40 cm) with two nestling flammulated owls approximately 21 d old (1–3 d from fledging). Although a small spot of pelage (1 cm²) on the mid-dorsal area of the carcass was missing, there was no indication that the owls had fed upon it; the skin contained no obvious punctures or talon marks. When the carcass was found it

had an odor of decay, indicating that the *Peromyscus* may have been dead for up to 24 hr (the previous visit to the nest was on 18 July). At the time of discovery (1430 H MDT) the adult female was roosting in a ponderosa pine (*P. ponderosa*) 5 m from the nest—typical roosting behavior for females just prior to fledging of their young (Linkhart 1984).

Because no vertebrate remains were found in 73 flammulated owl stomachs (Marshall 1957, Ross 1969), and no vertebrates were delivered in over 200 hr of observations at 37 flammulated owl nests in our study (representing more than 2000 prey deliveries observed), we offer some alternatives to the possibility that the owls may have killed the *Peromyscus*. First, the *Peromyscus* may have climbed to the cavity and been killed there by the adult owls. *Peromyscus* spp. commonly use tree cavities and bird nests for breeding sites (Golley 1962, Davis 1966), and some species of *Peromyscus* actively compete with birds for nesting cavities (Guillory 1987). Because the *Peromyscus* was whole and decaying in the bottom of the cavity, this alternative seems plausible. (However, the carcass may have been cached in the nest by the flammulated owls—a common behavior in several strigiforms.) Another possibility is that one of the adult flammulated owls found the *Peromyscus* dead and carried it to the nest. A third alternative is that another species of owl (e.g., northern saw-whet [*Aegolius acadicus*] or northern pygmy-owl [*Glaucidium gnoma*]), both common on our study area, may have delivered the *Peromyscus* to the nest in response to the food begging of the flammulated owl nestlings. Interspecific feeding of nestlings by various raptors has been reported (Shy 1982).

Given the possible alternative explanations of the carcass' occurrence in the nest, we believe that conclusive evidence that flammulated owls capture small vertebrates is still lacking.

RESUMEN.—Un esqueleto de *Peromyscus* sp. fue encontrado en el nido de *Otus flammeolus* en el centro de Colorado. No hubo indicación de que los adultos o polluelos de *O. flammeolus* se alimentaran de los restos. Corrientemente, se ha pensado que *O. flammeolus* es un insectívoro; se presentan varios alternativos (necrofagia, defensa del

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nido, alimentación interspecífica de polluelos) para la captura de *Peromyscus* sp. por *O. flammeolus*.

[Traducción de Ivan Lazo]

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LITERATURE CITED

- BAILEY, A.M. AND J.R. NIEDRACH. 1965. Birds of Colorado. Vol. 1, Denver Mus. Nat. Hist., Denver, CO U.S.A.
- BENI, A.C. 1938. Life histories of North American birds of prey. Part 2. *U.S. Natl. Mus. Bull.* 170, Washington, DC U.S.A.
- DAVIS, W.B. 1966. The mammals of Texas. *Texas Parks and Wildl. Dept. Bull.* 41, Austin, TX U.S.A.
- GOLLEY, F.B. 1962. Mammals of Georgia. Univ. Georgia Press, Athens, GA U.S.A.
- GUILLORY, H.D. 1987. Cavity competition and suspected predation on prothonotary warblers by *Peromyscus* spp. *J. Field Ornithol.* 58:425-427.
- HOLT, D.W., J.A. HOY AND P.L. WRIGHT. 1987. Occurrence and first nest record of flammulated owls in Montana. *J. Raptor Res.* 21:120-121.
- LINKHART, B.D. 1984. Range, activity, and habitat use by nesting flammulated owls in a Colorado ponderosa pine forest. M.S. thesis, Colorado State Univ., Fort Collins, CO U.S.A.
- MARSHALL, J.T. 1957. Birds of the pine-oak woodland in southern Arizona and adjacent Mexico. *Pac. Coast Avif.* 32:1-125.
- REYNOLDS, R.T. AND B.D. LINKHART. 1987. The nesting biology of flammulated owls in Colorado. Pages 239-248 in R.W. Nero, R.J. Clark, R.J. Knapton, and R.H. Hamre [EDS.], *Biology and conservation of northern forest owls*. Gen. Tech. Rep. RM-142, Rocky Mountain Forest and Range Exper. Sta., Fort Collins, CO U.S.A.
- ROSS, A. 1969. Ecological aspects of the food habits of insectivorous screech owls. *Proc. West. Found. Vert. Zool* 1:301-344.
- SHY, M.M. 1982. Interspecific feeding among birds: a review. *J. Field Ornith.* 53:370-393.

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